AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-23. (canceled)

24. (currently amended) A method of damping vibrations of a wing of an aircraft, the aircraft including a control system, a movable structure operatively connected to the wing, and an actuator operatively coupled to the structure to move the structure in response to a command signal generated by the control system, the method comprising:

~~mounting a vibration canceling circuit to the actuator;~~

~~using a vibration sensor operatively connected to the canceling circuit to sense a vibration of the wing and generate a signal representative of the vibration;~~

~~superimposing the vibration signal on the command signal to generate a resultant driver signal, the superimposing performed by the canceling circuit; and~~

~~operating the actuator with the resultant driver signal to cycle the structure to reduce the vibration of the wing.~~

processing a vibration signal representative of a vibration of the wing to obtain a vibration canceling signal, the processing performed independent of the control system in a vibration canceling circuit mechanically mounted on the actuator, the vibration canceling circuit including a vibration sensor that provides the vibration signal;

providing the command signal from the control system to the vibration canceling circuit;

in the vibration canceling circuit, superimposing the vibration canceling signal on the provided command signal to generate a resultant driver signal; and

operating the actuator with the resultant driver signal to cycle the structure to reduce the vibration of the wing.

25. (currently amended) The method according to Claim 24, further comprising ~~inverting the vibration signal before the superimposing the vibration signal on the command signal~~ performing the superimposing at a signal frequency exceeding the operating frequency of the command signal.

26. (currently amended) The method according to Claim 24, wherein ~~the step of using a vibration sensor operatively connected to the canceling circuit comprises coupling the vibration sensor to the actuator.~~ processing the vibration signal comprises inverting the vibration signal to obtain the vibration canceling signal.

27. (currently amended) The method according to Claim 24, further comprising: filtering, in the canceling circuit, the vibration signal from a position signal representative of a position of the actuator; and

inputting the filtered position signal from the canceling circuit to the control system.

28-39. (canceled)

40. (new) The method of claim 24, wherein the superimposing is performed to provide a ripple in the control signal.

41. (new) The method according to claim 24, further comprising operatively connecting the canceling circuit between the actuator and the control system without modifying the control system.

42. (new) The method of claim 24, further comprising:

disconnecting from the actuator a control system cable that carries the control signal; and

connecting the cable to the vibration canceling circuit.

43. (new) A method of damping vibrations of a wing of an aircraft, the aircraft including a control system, a movable structure operatively connected to the wing, and an actuator operatively coupled to the structure to move the structure in response to a command signal generated by the control system, the method comprising:

mechanically mounting a housing of a vibration canceling circuit on the actuator and electrically interposing the canceling circuit between the actuator and the control system;

rigidly coupling a vibration sensor to the actuator to provide a vibration signal in the canceling circuit representative of a vibration of the wing;

configuring the canceling circuit to use the provided vibration signal to produce a vibration canceling signal and to superimpose the vibration canceling signal as a ripple

on the command signal from the control system to generate a resultant driver signal; and

operating the actuator using the resultant driver signal.

44. (new) The method of claim 43, further comprising providing power to the canceling circuit and the actuator from the same power supply.

45. (new) The method of claim 43, further comprising operatively connecting the canceling circuit between the actuator and the control system without modifying the control system.

46. (new) The method of claim 43, further comprising configuring the vibration canceling circuit to filter the vibration signal from a position signal representative of a position of the actuator and to input the filtered position signal to the control system.

47. (new) The method of claim 43, further comprising providing power to the canceling circuit and actuator from the same power supply.

48. (new) The method of claim 43, further comprising configuring the canceling circuit to invert the provided vibration signal to produce the vibration canceling signal.

49. (new) The method of claim 43, wherein electrically interposing the canceling circuit comprises:

disconnecting from the actuator a control system cable that carries the control signal; and

connecting the cable to the vibration canceling circuit.

50. (new) A method of damping vibrations of a wing of an aircraft, the aircraft including a control system, a movable structure operatively connected to the wing, and

an actuator operatively coupled to the structure to move the structure in response to a command signal generated by the control system, the method comprising:

receiving from a vibration sensor a vibration signal representative of a vibration of the wing;

inverting the vibration signal and superimposing the inverted signal as a ripple on the command signal to obtain a driver signal, the ripple having a frequency higher than the operating frequency of the command signal; and

providing the driver signal to the actuator;

said method performed by a vibration canceling circuit mechanically mounted on the actuator and electrically interposed between the actuator and the control system.

51. (new) The method of claim 50, further comprising providing the driver signal to the actuator at a frequency substantially higher than the operating frequency of the command signal.

52. (new) The method of claim 50, further comprising:

filtering the vibration signal from a position signal representative of a position of the actuator; and

inputting the filtered position signal to the control system;

said filtering and inputting performed by the vibration canceling circuit.

53. (new) The method of claim 52, wherein the filtering is performed using a difference amplifier of the vibration canceling circuit.

54. (new) The method of claim 50, wherein the vibration sensor is mounted on the actuator.

55. (new) The method of claim 50, wherein the vibration sensor is mounted on the wing.